

pregnancy. She was tapped as for ovarian dropsy; unhappily it was an hepatic cyst, not united to the abdominal parietes, some of the fluid escaped into peritoneum, succeeded by death in eighteen hours. Insufficient stress had been laid upon the sufferer's statement that the swelling commenced at epigastrium.

It is probable that if the nature of the tumour had appeared doubtful, and the opening into cyst had been cautiously effected through the intervention of potassa fusa, the patient's life would have been spared. This unfortunate instance may be serviceable as a warning and as a hint in Dr. Markham's interesting case.

CLINICAL OBSERVATIONS ON THE TREATMENT OF FRACTURES BY THE IMMOVABLE APPARATUS.

By JOSEPH SAMPSON GANGE, Staff-Surgeon of the First Class, and Principal Medical Officer of the British Italian Legion during the last war; late Assistant-Surgeon to the Royal Free Hospital, House Surgeon to University College Hospital, etc.

[Continued from page 156.]

It was remarked in my last communication on the treatment of fractures, that the question is one of fact, and that *by fact it must be solved*: a process much more intricate and fraught with sources of fallacy, than its professed or apparent simplicity would lead one to suppose. Let any one examine the long catalogue of disputed questions in matter of fact in medicine and surgery, and he will arrive at the conclusion that their solution has been prevented, not so much by illogical reasoning, as by error in the observation of fact, and misstatement of the question at issue. To use the words of Sir Charles Bell,* "what are professionally called facts are for the most part only those notions which a man insensibly adopts in the course of his practice, and which take a colour from his education and previous studies. It is this which makes the facts of one age differ from the facts of another age; and the opinions of men differently educated to vary in what they are inconsistent enough to call matters of fact." The medical fact—I use the expression in its largest sense—is not, like the physical, a matter of simple and direct observation: it is, in the majority of instances, only arrived at by observation of several subordinate facts, by an exercise of extreme philosophic caution in excluding fallacy from inquiry into cause, and by logical severity in enunciating a statement of this mental process and its results. The laws of causation—always most intricate in the organic world—are so to a peculiar extent in all that affects deviation from the healthy standard of structure and function, wherein the relation of sequence is of itself no evidence whatever of causal affinity. The number of circumstances to be considered before a pathological or therapeutical fact can logically, and therefore with any sound hope of practical advantage, be referred to one or more causes, is so great, and requires so keen an analytical spirit, as to inspire doubt, whether many of those who specially devote themselves to medical inquiry have anything like a correct appreciation of its legitimate views, requirements, and processes. The following case of difficulty in diagnosing fracture is full of instruction in point in proportion to its simplicity.

An old man had fallen on the pavement, striking the left hip. Unable to rise, he was carried to bed; and a surgeon diagnosed fracture through the femoral neck, from the three following facts: very great difficulty and pain in raising the limb; ecchymosis and crepitation over the trochanter; shortening to half an inch. On being consulted as to the treatment to be adopted, I thus weighed the diagnostic signs. The difficulty of movement and ecchymosis, which were undoubted facts, were perfectly consistent with simple bruise. The crepitation and shortening, however, appeared an unmistakable sign of fracture; but, on examination, I found they were not facts. The crepitation was a slight superficial crackling, not a dull deep seated grating. On placing my hand over the sound trochanter, and moving it, I felt precisely the same crackling, which I consequently regarded as due on both sides to friction between the surfaces, most probably thickened and lengthened, of the old man's bursæ, the subcutaneous one on the trochanter, and the deeper one between that bony process and the insertion of the gluteus. At first the shortening seemed real; but,

on placing the hips perfectly bent, and tracing down the bones, I discovered a curious congenital deformity of the internal malleolus on the sound side; it was almost twice its natural size, both in breadth and length. This fact, conjoined with the observation that the length of the two femora, as measured to the patellæ, was perfectly equal, demonstrated the fallacy of the previous measurement, as due, not to shortening of the injured member, but to congenital inordinate length of a bony process of the sound one. The grating and shortening excluded, I suspected the case might be one of simple bruise; such it proved to be, after the old man had been in bed three days, with the benefit of cold lotions.

I have related this simple case to illustrate the complexity of simple medical facts, and the care necessary to their appreciation, even in what is considered one of the most simple departments of surgery—the diagnosis of a fracture. How much more difficult is all that relates to the very beautiful but really intricate subject of therapeutics! a branch of which is the theme of my present series of communications.

To avoid what has been above referred to as the second great obstacle to the attainment of truth in medical and surgical controversy—a *wrong statement of the question*—I purpose clearly to establish the object I have in view in the publication of these clinical reflections on the treatment of fractures of the limbs by the immovable apparatus—a plan of treatment much more comprehensive than might be supposed by its designation according to the instrument employed for carrying it into effect. Its most essential features refer—1. To the principle of immediate reduction, whatever be the direction or character of the fracture; 2. To the immobilisation of the severed fragments, so as to allow movement of the body, whether for mere comfort or more cogent reason, as in the case of fractures in military practice; 3. The employment of gentle and uniform compression as the preventive and curative of the swelling which so frequently complicates fracture; 4. The plan of treatment under consideration aims at discarding the multifarious contrivances at present generally employed in the treatment of fractures, and establishing on a scientific basis general rules of treatment, so far as is warranted by known facts, and by the peculiar difficulties attending generalisation in medicine.

[To be continued.]

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LARYNGISMUS STRIDULUS: ITS PATHOLOGY AND TREATMENT.

By THOMAS PAGET, Esq., F.R.C.S., Senior Surgeon to the Leicester Infirmary, etc.

I HAVE been led to select the present subject of to-night's consideration by but slight, if any, merit of originality in the view I am about to bring forward of a very serious infantile disorder. I have not, however, under the head of asthma infantum or cynanche stridula of Parr and Miller, or laryngismus of Good and others, found the disease so systematically and clearly considered as its dangerous import to life and its complications seem to demand; nor any principle indicated in the various treatments named, which by an intelligible philosophy and a simplicity of aim would commend itself to confidence. I cannot hope that my paper will evince any other merit than that of an attempt to supply this deficiency. Others have most probably adopted the views and treatment. I shall have pronounced them.

The phenomena of laryngismus stridulus I need not describe to professional brethren in technical phraseology, much less define with didactic precision. Who has not been sitting by the infant whose mother was recounting the suffocating spasms which had torn her child for the last few days (or rather nights, for the days have been less distressed), while she had gone on hoping from day to day without sending for medical aid? Which of us, while so occupied, has not seen suddenly come a frightened, staring expression in the child?—seen its pallor of cheeks with lividity of lips and orbital areolæ?—then noticed two or three coughs, expiratory jerks, or shrill cries short as explosions, it is difficult to say which to call them?—and witnessed the tussle that follows, when, the breath being thus jerked out, a closing of the glottis by spasm renders fresh inspiration impossible? How the poor thing writhes, struggles and stretches into opisthotonos, until want of air increases the pallor and lividity, which were at first only those of terror, to those of asphyxia, and the insensibility and relaxa-

* Observations on Injuries of the Spine and of the Thigh-Bone. London: 1824. p. 73.

tion of this state weaken the spasm. After this come the sounds which warrant the epithet "stridulus," the horrid, creaking, shrill whoops with which the air is drawn in through the half opened rima; and which so often delude parents into the fatal error of supposing that their child is only the subject of hooping-cough, which they conclude must have its course; so that nothing is done to stave off the convulsions which are so apt to finish the patient's suffering in death.

Besides, however, the essential symptoms, there are some very common though not constant adjuncts of the disease, which we will not lose sight of; namely, spastic contractions of hands and feet, involution of the thumbs into the palms, snatchings of the whole body while dozing, and even general convulsions, as above named; occasionally, too, much disorder of the chylopoietic organs, shown by sour smelling, curdy motions, green in colour and tormenting in their effect upon the intestines; but what severe infantile ailment is not accompanied by this plague as its effect?

In the diagnosis of this affection, the only mistake at all probable is the one before-named as common among parents, namely, confounding it with hooping-cough. Occasionally the sound of the first inspirations on relaxation of the spasm very much resembles the whoop; but the occurrence of the spasm after but a very few short coughs, or rather jerks, distinguishes one disease very decidedly from the other, in which the sound only occurs when protracted and violent coughing has considerably exhausted the aerial contents of the thorax. The name of spasmodic croup can but be thought unfortunate for this complaint. Neither eye nor ear that has once witnessed croup could possibly be led to think them alike; and the treatment requisite for either would damage the other by every agent used except emetics, which have been advised for both. In the sudden attack of dyspnoea with croupy sound which occurs in the night from indigestion, and is the only affection deserving the name of spasmodic croup, an emetic is, according to my experience, the remedy. In true laryngo-tracheitis, it seems little likely to help, and defers mischievously more valuable means.

The treatment of every malady is, of course, deduced from an insight into its nature and origin; or, to speak more in accordance with the vernacular of our science, its proximate, predisposing, and exciting causes.

As to the first or proximate cause, there is no doubt, I imagine, that it consists of a spasm of the laryngeal muscles closing the rima glottidis, and occasionally extending itself to the whole muscular system in the shape of general epileptic convulsion.

The second (predisposing) is found in the high sensitiveness and irritability which exist in infancy, and which are shown so signally in the snatchings that are seen as the infant lies upon the knee of its nurse during the many feverish affections of childhood; in the rapidity of pulse obtained from slight causes; in the tendency to convulsions after surgical operations, etc.

The third, or exciting cause, I believe, can logically and philosophically be cited as one only, namely, the process of teething. How this third cause acts upon the second, so as to produce the first—the proximate or essential one of the disease—is the point to be explained. Whether the communications between the fifth, the portio dura, the eighth, ninth, and sympathetic nerves, will help to explain; whether or not in fact anatomy will of itself satisfactorily account for this, or indeed any other disease, certain it is that the communications and interlacings are sufficiently numerous and intricate to support the physician when offering solution of the causation in this affection to the most straight-haired metaphysician, physiologist, or casuist.

But if anatomy does not summarily settle the point, there is an approximate certainty that the spasm of laryngismus is due to dentition alone as its exciting cause, if we find that under no other circumstances, except those of teething, does the disease exist; that is, the distinctive feature of this disease—the stridor laryngis. Of course these circumstances of dentition set in at the earliest period of the child's existence, three or four months from birth, or earlier, and terminate only with the completion of the first set. That the same affection does not occur with the change from the first to second set, we cannot take as any obstacle to the conclusion we are arriving at, so different is the constitutional state, the nervous susceptibility of youth from that of childhood. From the assertion of Good that these "stridulous spasms of the larynx are sometimes found in adults", I am compelled entirely to dissent. It must be granted him that negative experience will not rebut the

positive assertion of a fact observed; I question, however, if the passage above quoted deserves the title of a positive assertion, for it is only made by him in context with other random matter. In naming the means of distinguishing the disease from croup, he says, "Croup is, moreover, an *exclusive disease of children*; stridulous spasm of the larynx is *sometimes found in adults*". He neither says he has seen it himself, nor refers to any authority for the statement. Surely the whole passage is precipitate and unsound; for who has been five years in the profession without seeing laryngitis and tracheitis with the phenomena of croup in the adult? I have never seen the disease he has so aptly christened laryngismus stridulus after the period of cutting the first set of teeth. I do not think it has commenced under my eye later than the cutting of the first eight; and observation leads me to believe not only that authors are perfectly warranted in naming teething as one among other exciting causes, but that they would perhaps be more correct, more logical, if they insisted upon it as the only one of this peculiar affection. Dr. Ley has published an idea that these cases have their origin in another mechanical cause, namely, pressure of swollen cervical glands upon the recurrent laryngeal nerve. I have not been able to read his work yet; but if his idea be correctly reported by others, the objection to its value lies of course in the non-occurrence of the disease at any other time than the first two years of life; while, to sanction such a version, it should be a daily occurrence in practice at all ages. How far the derangement of the chylopoietic organs may be secondary to and only consequent upon the disease, it is difficult perhaps to say, so early does it begin in some cases. It must be confessed, however, it must always act as an excitor of the whole system by means of the *malaise* it inflicts upon the delicate fibrils of the splanchnic nerves, and thus be an auxiliary cause. That it is most probably only secondary, not *the*, or even *an*, original cause, I conclude, because I have seen cases without it; and the disease would be common at a later period of childhood if it were thus produced.

In the treatment of this serious plague of infancy, it follows that there are three objects to be fulfilled. 1st. The removal of the local irritation, or exciting cause. 2nd. The subjection of the predisposing cause or excitation of the nervous system before such means as lessen its sensitiveness. 3rd. The correction of chylopoietic mischief in order to remove an ancillary predisponent.

Of the first and third of these objects, little is required to be said. The free and repeated lancing of the gums over as many of the teeth as show swelling, redness, and heat, together with sedatives rubbed on the gums and cheeks, are all the means in our power for the first. Varied, but well recognised are those for the third object; but varied also is the need of them, many of the cases going on with little or even no chylopoietic derangement at all, some with a good deal. In all, however, as we before concluded, this mis-function (if we may coin a word) is probably secondary; and, if so, will be most effectually corrected by removing the approximate cause—the primary disorder. No one, however, would be likely to neglect the removal or the correction of acrid matter which, if in origin only an effect of the disease, must, by reflected agency upon the spinal system, help its continuance and increase its violence.

With regard to the second object, subjection of the predisposing cause, irritability of nerve, I have to say that I can nowhere find it at all clearly insisted upon; and I am quite convinced, both by the theory of the affection just given, and by practical experience, that this second is of paramount importance; that it is, in fact, *the* object in the treatment. Of course the agents to carry out this object are naturally expected to be found among narcotics; but the only recommendation I can find of this class is that of opiate and tobacco clysters; and apparently these are suggested only as a means to be used during the paroxysm: in short, as a palliative of its violence. Now surely no occlusion of the larynx, such as obtains in a spasm of this kind, could continue long enough to test the value of the remedy. Dr. Ley says it could not last three minutes without destroying life; indeed, the attack scarcely continues long enough to test the value of cold water sprinkled on the face, so rapidly does its violence and distress end in exhaustion and the consequent relaxation of the spasm. For the same reason the value of an emetic is really to be set down as *nil*. "An active and speedy plan of treatment," says Good, "is imperiously demanded, yet an antimonial emetic generally effects a cure as soon as it begins to operate." He surely must only mean the cure of one paroxysm, and the emetic could not be swallowed during it; or if by inspired knowledge it could be timed exactly before an attack, the spasm, dangerous to life by

its violence, would exhaust itself before any prudent emetic could operate. It would be easy but tedious to go through writers on the diseases of children, and to show how much at a loss they leave us for a principle on which to treat this "formidable and terrifying disease", as one of them aptly calls it. Miller, Parr, Good, Marsh, Clark, Ley, Evanson and Maunsell, Watson, West, Williams (the latter of whom is the most particular in his directions), insist upon various means—gum lancing, garlic, assafetida, emetics, purgatives, fresh air, opiate and tobacco enemata, but they name no principle to be aimed at in the administration of them; the two latter seem only given as occasional remedies for violence or frequency of paroxysm.

If we have been correct in fixing upon teething as the one exciting cause of laryngismus stridulus; correct also in concluding that it becomes operative only through the excitability which is natural to infancy, but obtains in an exaggerated degree in certain individuals, it results that after the removal of the exciting cause, and taking care that no irritability of the visceral nerves shall add fuel to the fire; in fact, after lancing the gums, effecting a clearance of the bowels, and contriving a prescription, dietetic and medicinal, for the correction and prevention of acrimony in the bowels, we are left to what I believe to be our most important object, namely, the subjection of nerve excitement by means of narcotics: we are left, in short, to deal with the mainspring of the disease, its predisposing cause. Upon the narcotic to be used, upon the mode of giving it, or the dose required, I need lay but little stress, especially since it is well known how varied is the susceptibility of individuals in reference to this class of medicines. Suffice it to say, that the drug I have most used is opium; that, beginning with small doses, and cautiously regulating them according to their effect, I do not stop short of producing a constant drowsiness and some slight pallor; that when this state is obtained, the paroxysms decrease in force and frequency, the infant is calmly sleeping its day away, no longer devil-torn, nor are its friends racked with anxiety; and that when the paroxysms have failed to occur for some forty-eight hours, which will usually happen in from three to six days, the drug is gradually withdrawn, the quantity taken off each dose being immediately restored if the attacks show the slightest disposition to encroach again. I may say, also, that to attain to the required effect I have usually been obliged to give to children four or five months old (the age at which the disease most commonly, perhaps, invades) from one to five minims of tincture of opium in a dose with four or six of sal volatile two or three times a day; or if in enemata, five to seven minims.

The principle, then, I would enunciate as the object of treatment after the more obvious ones, the removal of all causes of irritation, is the quieting of nerve excitability—the drowning of hyperæsthesia in a guarded, gentle, yet decided narcotism. I think it probable I may find that there is nothing new in the treatment itself; that, in fact, others have for years pursued the same. It seems to myself so obvious a course that I should be almost surprised to find that it had struck me alone as the proper one. It is, however, the first time, as far as I know, that this principle has appeared in public.

I have depended upon it for the period of twenty years and more; I cannot add, without losing a case; but I can say that it has saved many, or seemed to do so; and with the strictest investigation memory is capable of affording, I see no reason to doubt its safety, its efficiency, or the prudence of continuing it. I therefore adopt it in every instance that presents itself. It is now some years since I named it at the meeting of the Provincial Medical Association held in Worcester.

ON SOME OF THE MODES OF ACTION OF IODIDE OF POTASSIUM.

By E. H. SIEVEKING, M.D., F.R.C.P., Lecturer on Materia Medica; Assistant-Physician to St. Mary's Hospital, etc.

[Read before the Harveian Society, February 5th, 1857.]

Of the remedies which we owe to the advancement of modern chemistry, there certainly is none which has obtained a higher place in the estimation of medical men than the iodide of potassium. There may be some difference of opinion as to its efficacy in this or that individual case or in certain classes of disease, but its general utility as a member of the Pharmacopœia is undenied and, I would add, undeniable. Rarely in-

ducing any unpleasant effects and, unless administered with culpable carelessness, never giving rise to disturbances in the system of a dangerous and permanently injurious character, it may be classed among the safest and at the same time most beneficial remedies we possess. At times it induces, in ordinary doses, frontal headache and coryza, an eczematoid eruption, or brief salivation; but by diminishing the dose or persevering steadily in the remedy prescribed, we generally soon succeed in removing these symptoms, and the toleration being established, it appears to work for the good of the patient.

Having been called upon unexpectedly and at a very brief notice to furnish a paper for the Harveian Society, it will be impossible for me to enter fully into the various questions connected with the physiological and therapeutic action of this drug. At any time, such a subject could not be exhausted in the course of a single evening. It is my wish to present it to you under some of those aspects, under which I have very frequently witnessed its effects; the more so, as by so doing, I feel satisfied that I shall succeed in eliciting valuable information from the experienced members of the Society present.

The action of iodide of potassium may be defined, according to the more old-fashioned terminology of therapeutics, as alterative; and alternative most undoubtedly it is, for it appears to search out the malady which it is intended to attack, and effectually to alter the condition of the solids and the fluids which induces the morbid symptoms. The terminology of therapy now more in vogue would class it among eliminants; and "eliminant" it indeed deserves to be called, for it stimulates powerfully at least one, not the least important secretion of the body, and by promoting the action of the kidneys, causes an elimination of organic and inorganic poisons through their agency. According to another view, the iodide of potassium might be ranked as a tonic, and if to rouse the lymphatic and glandular system from a state of torpor, to promote the removal of sluggish enlargements, to brace the pulpy, flabby tissues of the scrophulous, be a characteristic of a tonic medicine, we may fairly class it under that head. Our object, however, is not to determine what exact place it may occupy in the materia medica, where so much is yet wanting to establish anything approaching to a scientific system; we would rather examine into its action in certain classes of morbid affections, by which we may illustrate the therapeutic effects of the agent. While we admit that this *à posteriori* mode of viewing the subject is not the best possible, we think that in the present state of medical science it is perfectly justifiable. Though it is necessary to remember that the method of arguing from effects, involves those errors to which the manifold interpretation to which morbid conditions are liable, must always tend to expose the deductions of the physician.

Of the various organs of the body, the kidneys most uniformly, as far as we know, demonstrate the action of the salt in question. We trace it by the well known tests in the urine, after the first dose; I have found it in the urine, after a course of iodides, forty hours after the exhibition of the last dose. It rarely fails to increase the quantity of the urine discharged, while it manifestly augments the amount of the solid constituents contained in the secretion. The urates, and the uric acid more especially, are evolved in larger quantities, and taking the urine as our test, we clearly recognise a material augmentation in the tissue changes excited in the organism. These tissue changes are rarely otherwise than for the benefit of the patient; they, with rare exceptions, stop short of such destructive processes as are set up by some other minerals; yet it is to be borne in mind that even the iodide of potassium may by too long continued exhibition prove a poison, and by inducing excessive metamorphosis of the tissues, set up a wasting azoturia. Those who have had to deal with such cases know how depressing they are to the patient, how tedious to the physician; but fortunately they are comparatively rare, and with ordinary care these, and even the temporary ill effects of iodide of potassium before alluded to, may be avoided.

I would propose to offer for your consideration the iodide of potassium under three different points of view, as applied to the treatment of disease. It is, however, to be observed that this by no means embraces all its therapeutic aspects.

The modes in which I will regard it, are:

- I. As an evacuant of excessive morbid secretions in the cavities of the body.
- II. As an antidote to organic poisons.
- III. As an antidote to and eliminant of inorganic poisons.

1. *Iodide of Potassium an Evacuant of excessive Morbid Secretions in the Cavities of the Body.* While I would, in refer-